

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims:

1 - 3 (Canceled)

4. (Original) A liquid chromatograph pump comprising a cylinder having an inner wall surface, and a plunger reciprocating in the cylinder, the plunger being formed on its outer surface with a stepped part along the driving direction of the plunger so as to define a working chamber between the stepped part and the inner wall surface of the cylinder, wherein an end part of the plunger on the side remote from the drive side, is exposed to a gas atmosphere.

5. (Currently Amended) A liquid chromatograph pump as set forth in claim 4, comprising ~~a first pump incorporating a first cylinder, and a first plunger reciprocating in the first cylinder, and a second pump incorporating a second cylinder having an inner wall surface, and a second plunger reciprocating in the second cylinder~~ ~~a plurality of the cylinders as first and second cylinders and a plurality of the plungers as first and second plungers to form respective first and second pumps~~, a suction valve being provided on the upstream side of the first pump, a discharge valve being provided on the downstream side of the first pump, and the

stepped part being formed at least on the outer peripheral surface of the second plunger in the second pump, along the driving direction of the second plunger so as to define the working chamber between the stepped part and the inner wall surface of the second cylinder, wherein one end part of the second plunger on the side remote from the drive side is exposed to a gas atmosphere, and the second pump is located at the most downstream position among a plurality of pumps provided in the liquid chromatograph pump.

6. (Currently Amended) A liquid chromatograph pump as set forth in claim 4, comprising ~~a first pump incorporating a first cylinder, and a first plunger reciprocating in the first cylinder, and a second pump incorporating a second cylinder having an inner wall surface, and a second plunger reciprocating in the second cylinder~~ a plurality of the cylinders as first and second cylinders and a plurality of the plungers as first and second plungers to form respective first and second pumps, a suction valve being provided on the upstream side of the first pump, a discharge valve being provided on the downstream side of the first pump, and the stepped part being formed at least on the outer peripheral surface of the second plunger in the second pump, along the driving direction of the second plunger so as to define the working chamber between the stepped part and the inner wall surface of the second cylinder, wherein one end part of the second plunger on the side remote from the drive side is exposed to a gas atmosphere, the working chamber in the second pump is connected thereto with a discharge passage from the liquid chromatograph pump, and a working chamber defined in

the first pump is connected thereto with a suction passage connected to the liquid chromatograph pump, and the first pump and the second pump is connected to each other in series.

7. (Currently Amended) A liquid chromatograph pump as set forth in claim 2, 3, 5 or 6, comprising an eluent reserving container for reserving eluent to be fed by the liquid chromatograph pump, a low pressure pump being provided between the eluent reserving container and the first pump, and a change-over valve, a passage communicated to the eluent reserving container and a passage communicated to a column being provided on the downstream side of the second pump, wherein the low pressure pump is operated so as to feed liquid at a large flow rate in order to fill the eluent in the passages on the downstream side while discharging air bubbles remaining in the pumps and the passages, thereafter, the change-over valve is connected to the passage communicated to the column, and then a trace of the eluent is fed by the first pump and the second pump.

8. (Canceled)

9. (Currently Amended) A liquid chromatograph pump as set forth in claim 4, 11 or 4, wherein a liquid flow rate range is from about 0.1 nL/min to 50 μ L/min.

10. (Canceled)

11. (New) A liquid chromatograph pump comprising:

an upstream-side plunger pump and a downstream-side plunger pump connected fluidly in series,

a first check valve arranged at an upstream side with respect to the upstream-side plunger pump to prevent a liquid from flowing from the upstream-side plunger pump to the upstream side with respect to the upstream-side plunger pump when a plunger of the upstream-side plunger pump moves forward to pressurize the liquid in the upstream-side plunger pump, and to allow the liquid to flow toward the upstream-side plunger pump from the upstream side with respect to the upstream-side plunger pump when the plunger of the upstream-side plunger pump moves backward to take the liquid into the upstream-side plunger pump, and

a second check valve arranged between the upstream-side and downstream-side plunger pumps to prevent the liquid from flowing from the downstream-side plunger pump toward the upstream-side plunger pump when the plunger of the upstream-side plunger pump moves backward to take the liquid into the upstream-side plunger pump and the plunger of the downstream-side plunger pump moves forward to pressurize the liquid in the downstream-side plunger pump, and to allow the liquid to flow from the upstream-side plunger pump toward the downstream-side plunger pump when the plunger of the downstream-side plunger pump moves backward to take the liquid into the downstream-side plunger pump and the plunger of the upstream-side plunger pump moves forward to pressurize the liquid in the upstream-side plunger pump to make a flow rate of the liquid discharged

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from the upstream-side plunger pump greater than a flow rate of the liquid stored in
the downstream-side plunger pump.